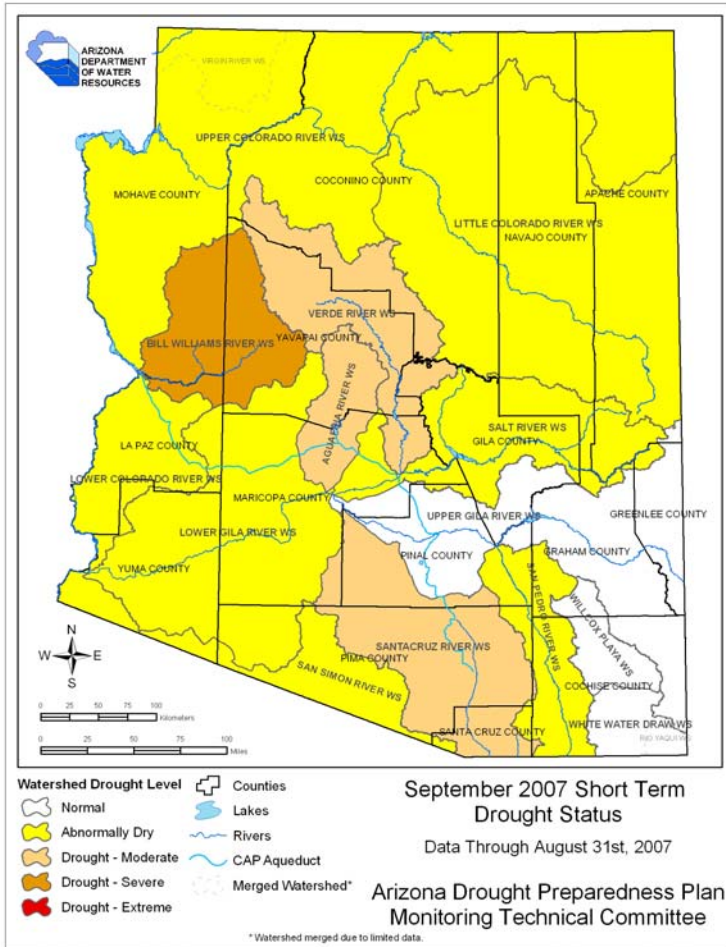


Arizona Drought Monitor Report *September 2007*

Short-term Drought Status

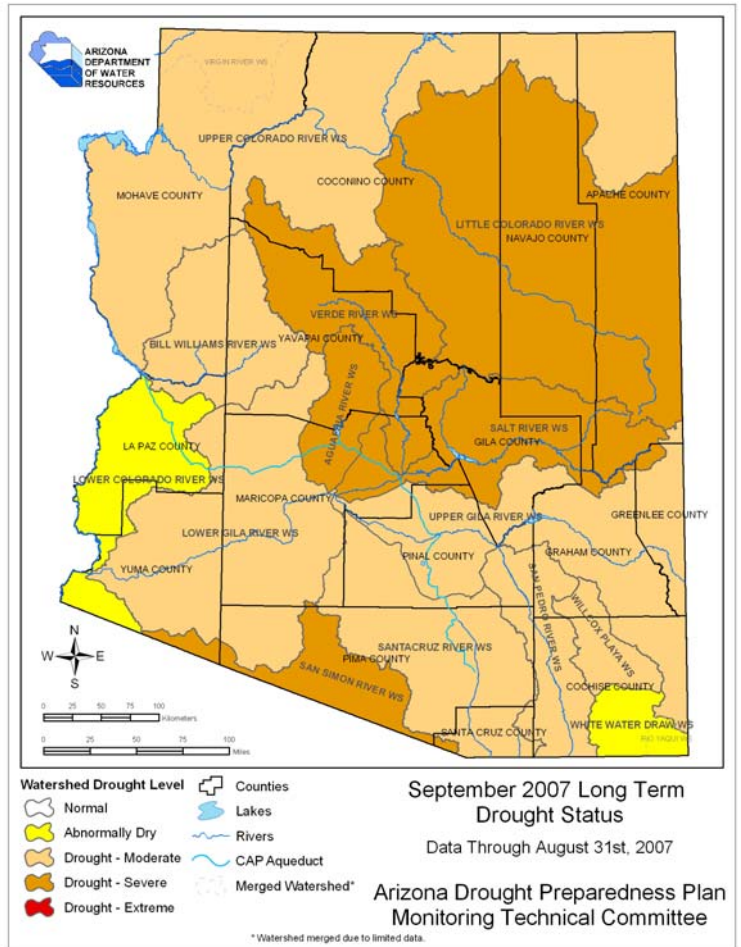


Short-term Update

The short-term drought status has changed dramatically for nine of the 15 Arizona watersheds. During the three- and six-month periods, rainfall has been significantly above average in all watersheds except the Bill Williams and Santa Cruz. This improvement leaves the northern watersheds either abnormally dry or in moderate drought. Three of the southern watersheds are "normal," two are abnormally dry, and the Santa Cruz is moderate. The Bill Williams watershed is still in a severe drought condition. Short-term improvement is not uncommon during a wet monsoon. However, unless wetter than average conditions continue into the winter, no further improvement is expected.

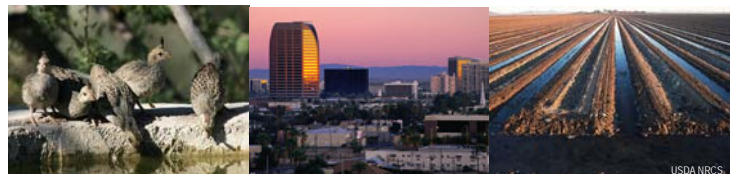


Long-term Drought Status



Long-term Update

The long-term drought status changed in parts of south central Arizona, with the Santa Cruz improving from severe to moderate drought, and the Upper Gila and Salt watersheds worsening from abnormally dry to moderate drought and moderate to severe drought, respectively. Few of the watersheds have had above average precipitation in the 24-, 36- or 48-month periods. The last two years have been exceptionally dry across the state.



Reservoir Storage



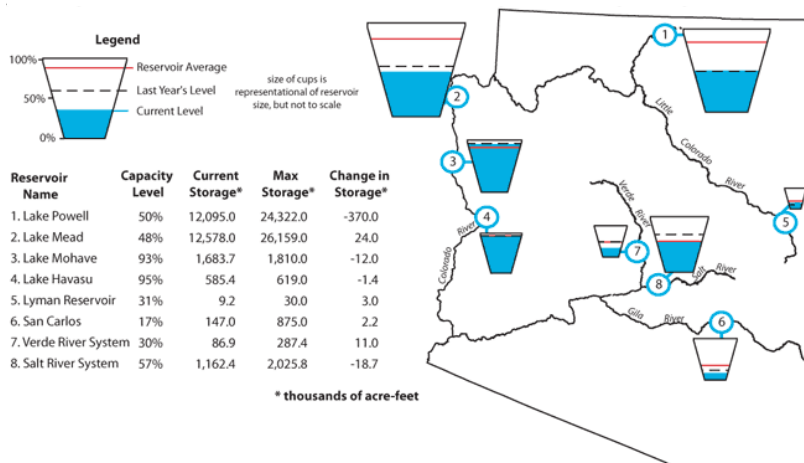
Vegetation Health



Arizona Reservoir Status

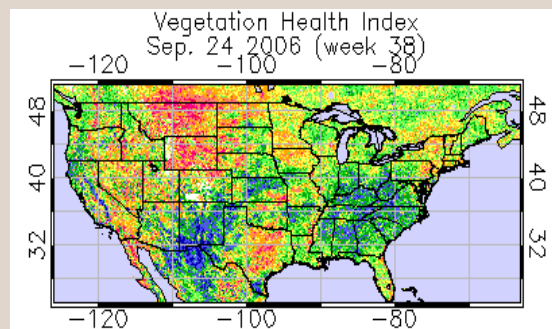
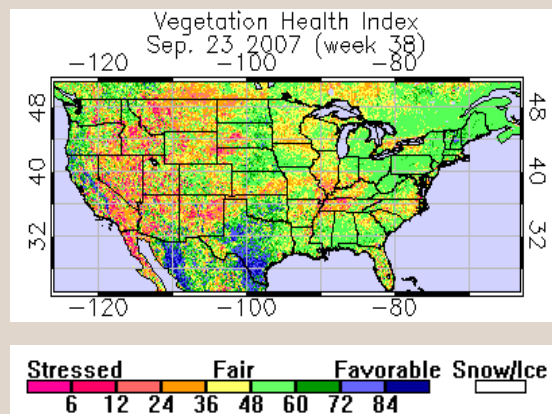
Levels increased in Lyman Lake, San Carlos Reservoir, and the Verde River Basin as a result of summer monsoon precipitation. Levels of other Arizona reservoirs declined during the last month. The combined levels of Lake Powell and Lake Mead declined slightly during the last month, as did levels of reservoirs in the Salt River watershed. Reservoir storage in Lake Powell and Lake Mead has decreased during the past 8 years. According to the Bureau of Reclamation, water year inflow to Lake Powell for 2007 (October 2006 through September 2007) is projected to be 69 percent of average. The water surface elevation of Lake Powell will likely decrease between now and March of 2008. The Arizona Republic (September 15, 2007) reported that an invasive mollusk, the quagga mussel, was reported in the Central Arizona Project canal. While the mussels pose no health threat to drinking water, their populations can expand exponentially, clogging pipes and pumps and threatening native ecosystems.

Arizona reservoir levels for August 2007 as a percent of capacity. The map depicts the average level and last year's storage for each reservoir, while the table also lists current and maximum storage levels.



Photos by the National Park Service

Vegetation health indices from the NOAA Center for Satellite Applications and Research show wide-spread variability in vegetation health around the state. The most robust vegetation health is in South-eastern Arizona, and along the Mogollon Rim (top). These areas received average-to-above-average summer precipitation. Areas of vegetation stress include southwestern Arizona, the Arizona Strip (along the Utah border) and parts of northeastern Arizona. Vegetation health has declined in most parts of the state in contrast to one year ago (bottom). Greenup during and following the 2006 monsoon season was quite substantial in contrast with 2007.



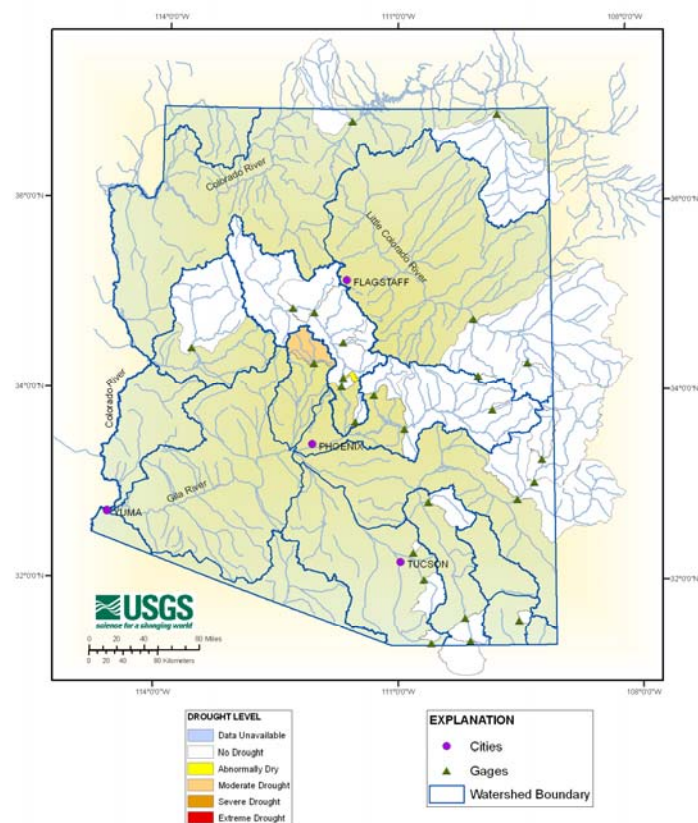
Images are obtained from the NOAA National Environmental Satellite, Data and Information Service (NESDIS).

Mountain Streamflow and Precipitation



Drought Levels Based on Monthly Streamflow Discharge

August 2007



August Streamflow

Summer storms continued to deliver abundant precipitation to the mountain basins throughout the month, which triggered runoff to increase to much above the 30-year median (see table below).

Water body	August Runoff in Acre Feet	% of Median
Salt River near Roosevelt	69,175	286%
Tonto Creek	6,177	338%
Verde River at Horseshoe Dam	26,257	183%
Combined Inflow to Salt River Project (SRP) reservoir system	101,609	248%
Little Colorado River above Lyman Lake	2,490	356%
Gila River to San Carlos Reservoir	30,500	508%

Mountain Precipitation

Data from snow telemetry (SNOTEL) sites and other mountain gauges show that total precipitation for August was 109 percent of average over the Salt River basin, 89 percent of average over the Verde River basin, and 127 percent of average over the San Francisco-Upper Gila River basin. The Little Colorado River basin received 96 percent of average precipitation in August.

Even though storms delivered near to above average precipitation to the basins, cumulative precipitation remains below average for the water year, ranging from 61 percent to 88 percent of average (see table at right).

Watershed	Percent (%) of 30-Yr. Average Water Year Precipitation October 1 – August 31
Salt River Basin	79%
Verde River Basin	61%
Little Colorado River Basin	72%
San Francisco-Upper Gila River Basin	88%
Other Points of Interest	
Central Mogollon Rim	70%
Grand Canyon	79%

Temperature and Precipitation



August, like July, is generally a wet month across Arizona, but this year the precipitation was not equally distributed across the state. While the Colorado plateau, higher elevations of the White Mountains in the east, and the southeast corner of the state received higher than average rainfall, Yuma had no measurable precipitation. Temperatures across the state were all above the 89th percentile.

3-month period – Precipitation was well above average for 11 watersheds and near average for three watersheds, due to the wet July. The wet conditions in the north helped to decrease temperatures below the 95th percentile, where they had been for the previous 3-month period.

6-month period – Rainfall was slightly above average in the north, along the lower Colorado River in the west, in the eastern mountains, and in the southeast corner. The central part of the state was slightly below average. Temperatures were above the 95th percentile everywhere in the state except the northwest, which was at the 92nd percentile.

12-month period – This period combines the dry winter of 2006-07 with the slightly above-average summer monsoon of 2007. The southeast, eastern, and lower Gila watersheds were very near average, while the rest of the state had a very dry year. While temperatures were much warmer than average, only two climate

divisions were above the 90th percentile due to the very cold weather that came through the state in late December and early January.

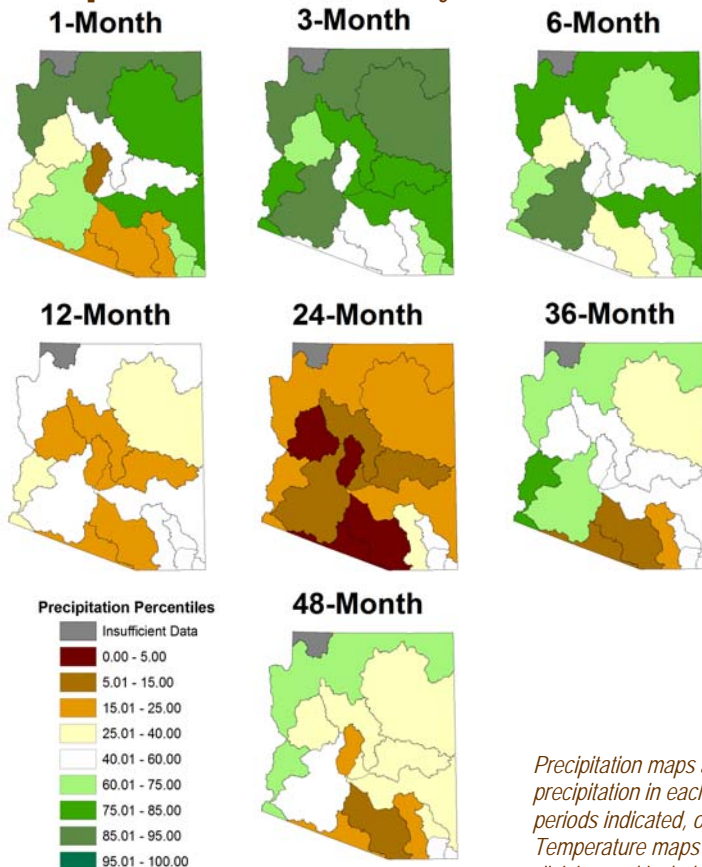
2-year period - The cycle of an extremely dry year occurring at least every two years is continuing. Temperatures in the state for the 2-year period reflect the absence of storm systems, with all climate divisions except the northwest above the 90th percentile. The extremely dry conditions in south central Arizona are consistent with the temperatures above the 97th percentile.

3-year period - The 36-month precipitation period shows the results of the wet winter of 2004-05 in northern and western Arizona. The rest of the state is near or below average for the three-year period. This oscillation back and forth between wet and dry years is not unusual for desert climates where precipitation is generally low most of the time. The 36-month-temperatures remain very high, with the southeast climate division continuing to be the hottest on record.

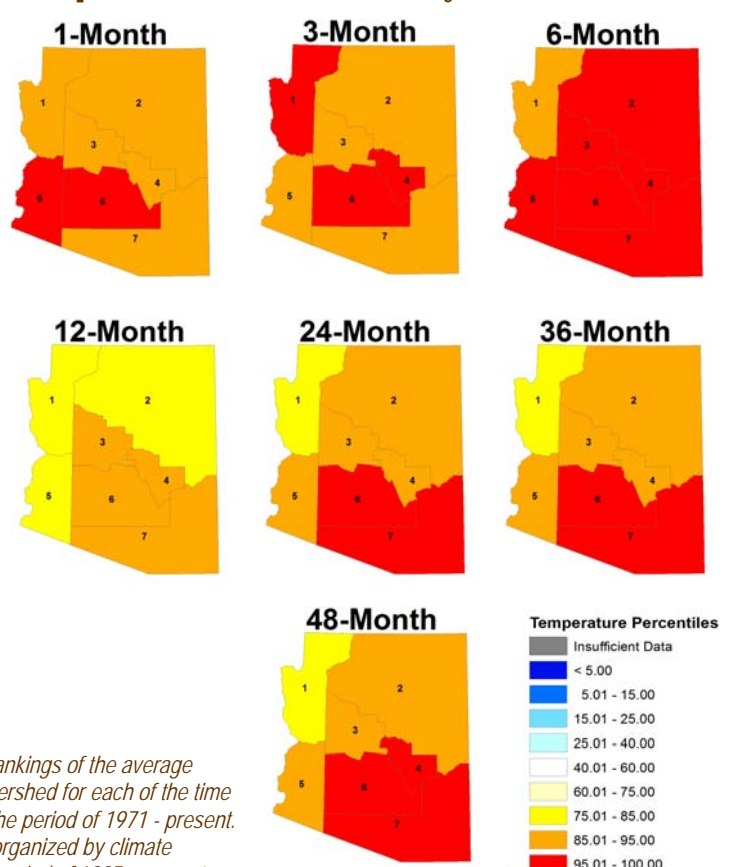
4-year period - The 48-month period precipitation is above average across the northern part of the state, and well below average in south central Arizona. The warm conditions continue with the two southern climate divisions above the 99th percentile for temperature, and all climate divisions above the 78th percentile.

For more information, visit <http://www.public.asu.edu/~aunjjs/Update.html>.

Precipitation Percentiles by Watershed



Temperature Percentiles by Climate Division



Precipitation maps are rankings of the average precipitation in each watershed for each of the time periods indicated, over the period of 1971 - present. Temperature maps are organized by climate division and include the period of 1895 - present.

Weather Outlook

Arizona Drought Monitor Report -
Produced by the Arizona State Drought
Monitoring Technical Committee

Co-chairs:
Gregg Garfin, University of Arizona –
Institute for the Study of Planet Earth
Tony Haffer, National Weather Service

Mike Crimmins, Extension Specialist,
University of Arizona Cooperative
Extension

Charlie Ester, Salt River Project

Larry Martinez, Natural Resources
Conservation Service

Ron Ridgway, Arizona Division of Emer-
gency Management

Nancy Selover, State Climatologist
Arizona State University

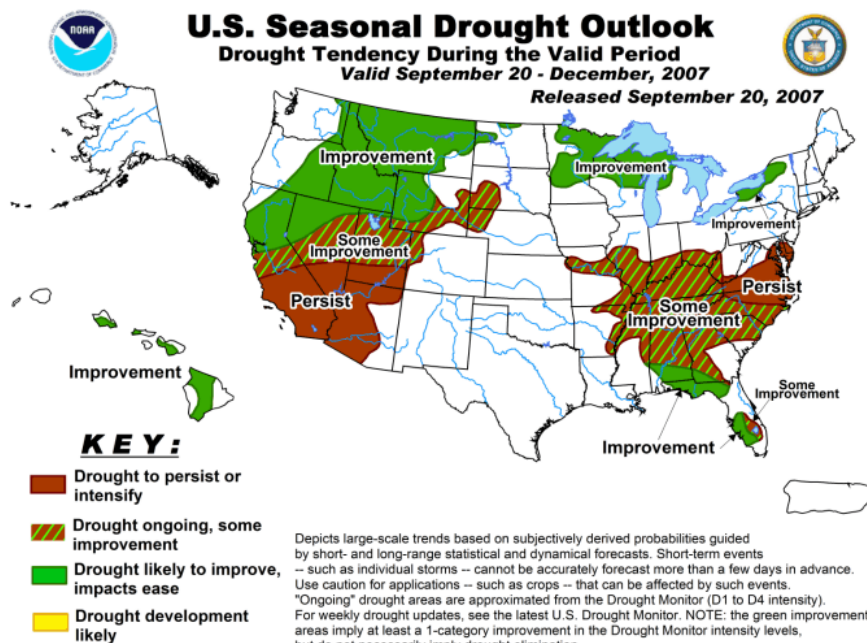
Chris Smith, U.S. Geological Survey

Coordinator: Susan Craig, Arizona
Department of Water Resources
Computer Support: Andy Fisher, Arizona
Department of Water Resources



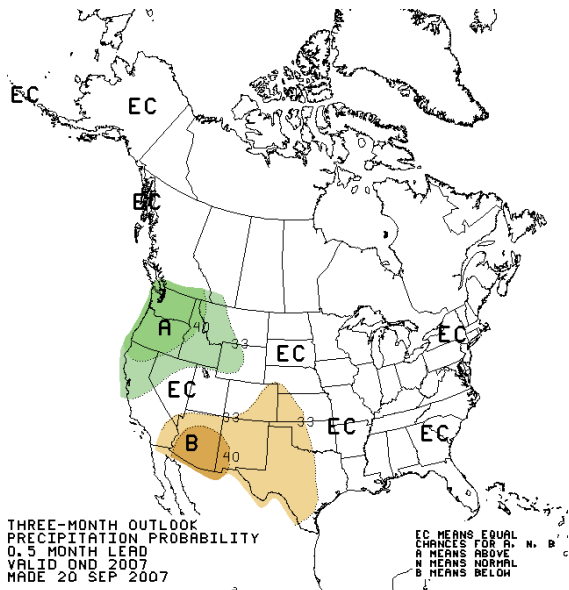
Drought Outlook

The CPC Seasonal Drought Outlook indicates drought conditions across the western two thirds of the state will persist through at least December.



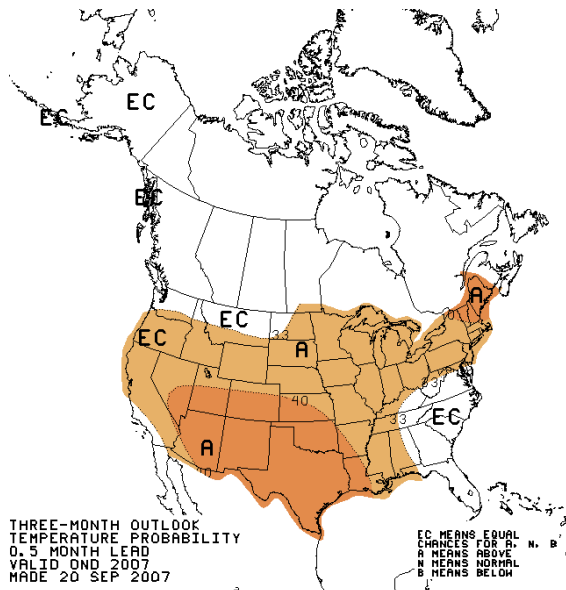
Also see the most current Southwest Climate Outlook - www.ispe.arizona.edu/climas/forecasts/swoutlook.html
For additional weather information from the Office of the State Climatologist for Arizona - <http://geography.asu.edu/azclimate>

October to December Weather Outlooks



Precipitation

Modest confidence precipitation will be below normal across the state during the 90-day period



Temperature

High level of confidence temperatures will be above average across the entire state